

John Day Fish Passage and Screening

**Annual Report
2003**



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JOHN DAY FISH SCREENING AND PASSAGE
BPA ANNUAL REPORT JAN. – DEC. 2003



Oregon Department of Fish and Wildlife
Annual Report-2003
Oregon Screens Project

Oregon Screens Project
BPA Project Number: 199306600

Contract Period: January 1, 2003 – December 31, 2003

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2003 Annual Report

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Oregon Screens Project

Annual Report

January 1, 2003 to December 31, 2003

GOALS

The primary goal of the Oregon Screens Project was to implement 20 replacement screens projects in the John Day sub-basin and any projects identified in the Umatilla and Walla Walla sub-basins. A secondary goal is to complete a passage project, if one is identified, in any of the above sub-basins. Mid-Columbia ESU listed steelhead and USF&W listed bull trout inhabit these sub-basins and are present at most locations, along with a variety of resident fish species. We also provide assistance to our Enterprise Screen Shop, in the Grande Ronde/Imnaha sub-basins, if needed. All projects were designed and implemented under current National Marine Fisheries Service screening and passage criteria.

BACKGROUND

The John Day River sub-basin screening program began in 1952 under the Mitchell Act. Federal funds were allocated for the screening of fish from irrigation diversions. This was to protect wild runs of salmon and steelhead in the John Day River system. Recently the John Day program updated its database of operating screens. The number of screens that annually operate has lowered, due to changes in property ownership, water delivery methods and abandonment. Currently we have 319 operational fish screens, encompassing the three sub-basins. The John Day sub-basin has 276 operational screens and the Umatilla/Walla Walla sub-basins have 43 operational screens. Of the operational screens in the John Day, 150 meet current screening criteria and 126 do not. Of the screens operating that do not meet criteria, most operate poorly because of factors involving the deteriorating condition of the structure and components. Of the operational screens in the Umatilla/Walla Walla, all but 1 meet current criteria. Since 1997, 141 BPA replacement projects have been completed in the John Day and 6 in the Umatilla/Walla Walla sub-basins.

This project is necessary to ensure that replacement of fish screening devices and fishways meet current NMFS design criteria for the protection of all salmonid life stages. The mission of the fish passage program in Northeast Oregon is to protect and enhance fish populations by assisting private landowners, public landowners, irrigation districts, and others by maintaining fish screening devices and fishways. These facilities reduce or eliminate fish loss associated with irrigation withdrawals, and as a result ensure fish populations are maintained for enjoyment by present and future generations. Assistance is provided through state and federally funded programs and can range from simple technical advice to complete construction and maintenance of facilities.

LOCATION

The projects all occurred on private and public lands within the John Day, Umatilla, and Walla Walla sub-basins. The Oregon Department of Fish & Wildlife replaced 21 fish screening devices within the three sub-basins during the 2003 work period. These efforts reflect ODFW's continued commitment to protect anadromous and resident fish species inhabiting their migration, spawning and rearing areas. A detailed list of screen sites and their locations can be found in Table 1. The number of project sites and locations listed in Table 1 included more than 20 sites. The number of project sites is modified throughout the work period due to the following factors: this is a voluntary program, changes due to weather, irrigation, crop rotations and harvest, access conditions and landowner cooperation. The previous listed factors make it difficult to set priorities. We always have numerous project sites lined up so as to meet our commitment of 20 completed projects for the work period.

DELIVERABLES

Quarterly Progress Reports and an Annual Report of the project.

First Quarter Progress report was submitted for period 1/1/03 to 4/30/03. Second Quarter Progress report was submitted for period 5/01/03 to 6/30/03. Third Quarter Progress report was submitted for period 7/01/03 to 9/30/03. Fourth Quarter Progress report covered the period 10/01/03 to 12/31/03 and that information is covered in this annual report.

NEPA and ESA

The EIS checklist was completed and approved prior to project implementation and 2003 funding. We complied with all NEPA and ESA requirements.

2003 OVERVIEW OF ACTIVITIES

2003 John Day Program Personnel: (See Organizational Chart Table 6).

Administration

- (1) NMFS Principal Executive Manager A; (1) NMFS F&W Manager 2; (1) NMFS Office Coordinator; (1) BPA/OWEB Office Specialist 1

Carpenters

- (3) BPA Carpenters; (1) NMFS Carpenter; (3) OWEB Carpenters; (1) OWEB limited duration Carpenter;

Welders

- (1) BPA Welder; (3) BPA limited duration Welders; (1) NMFS limited duration Welder; (2) OWEB Welders;

Painter

- (1) BPA limited duration Painter;

Project Support

- (1) OWEB T/M Coordinator; (1) OWEB Engineering Technician 3; (1) OWEB Engineering Technician 2;

Screens O&M

- (3) NMFS F&W Tech 1's; (1) NMFS T/M Worker 2.

Summary of Work Completed:

- Landowner contacts were made to obtain permission for access, timing, and coordination of projects.
- Project planning that included contacts with appropriate agencies for water rights, priorities, NEPA compliance, permits, and design and layout consultation.
- Project preparation surveys to determine specific access routes, site location, system type, structure grades, and bypass routes, lengths and grades.
- Fabrication of 5 new structure forms and reassembly of 12 structure forms.
- Fabricated 4 prefab screen boxes.
- Retrofitted 1 existing box and converted to solar.
- Fabricated all screen components for 21 screening systems.
- Operation and maintenance of 319 existing fish screening devices (see Table 3).
- Replacement of 21 outdated fish screening devices that totaled 24 screens (some were multiple screen systems).
- Construction crews poured 197.25 yards of concrete.
- Laid 2700 feet of bypass pipe.
- Installed 2 head gates.
- Installed 2 measuring devices.
- Screened a total of 59.03 CFS.

With the replacement of the 21 fish screening devices during 2003, we now have 192 screening devices that meet NMFS criteria, 150 in the John Day and 42 in the Umatilla/Walla Walla. Funding for these projects was attained from BPA, NMFS and OWEB.

*Note: Two additional projects were in various stages of construction and were not complete at the end of this report period.

Facility / Grounds Improvements, Maintenance, and Repairs:

- Winterizing of facility and grounds.
- Winterizing of vehicles and snow tires installed.
- Yearly scrap metal cleanup at our facility.
- New installation of shop heating system was completed.
- Maintained lawn, shrubbery, storage, and parking areas.
- Completed routine, major and preventive maintenance on shop and field equipment, includes Motor Pool rental.
- Completed routine, major and preventive maintenance of facilities, includes utilities.

Meetings and Training:

- Internal monthly safety meetings and trainings were conducted.
- Several employees attended a SAIFer driving course.
- Several employees attended CPR/First Aid refresher training.
- Several employees attended Overhead Crane Training
- Several employees attended Mobil Crane Training
- Several employees attended a Qualified Person Trenching and Shoring Training
- Several employees attended ATV Safety Training
- Several employees attended Regional meeting in La Grande, Oregon.

2003 Division of Work Hours :

COST CENTER- PROJECT	DIVISION OF HOURS	TOTAL HOURS.
45310-355002-07 Basin 6	Regular BPA	13,529
	Holiday	542
	Vacation	868
	Sick Leave	589
	Comp. Time Accrued	41
	Comp. Time Leave	52
	Personal Business	152
	Governor's Leave	72
	Sick Leave Medical Leave Act	56

BPA Employees Other Screen Hours

20310-882003-07 Basin 15	Regular	148
37310-437000-16 Basin 5	Regular	17
54008-945039-07 Basin 6	Regular	91
TOTAL HRS.		16,157

Identified Projects Sites for the John Day Basin- 2003

Table 1

Screen Site	Stream	Tributary To	Water User	Screen Number	Project Status
1. Basin 6	M.F. John Day R.	John Day R.	Holmes	M.F.J.D.R. # 8	Complete
2. Basin 6	M.F. John Day R.	John Day R.	Holmes	M.F.J.D.R. # 9	Cancelled
3. Basin 6	S.F. John Day R.	John Day R.	McArthur	S.F.J.D.R. # 3	Complete
4. Basin 6	Canyon Cr.	John Day R.	Baucum	Can.C. # 2 (85)	Complete
5. Basin 6	Canyon Cr.	John Day R.	Thunell	Can.C. # 10` (84)	Complete
6. Basin 6	John Day R.	Columbia R.	Stout	J.D.R. # 60 (94)	Complete
7. Basin 6	Wind Cr.	S.F. John Day R.	Phillips	W.C. # 1	
8. Basin 6	S.F. John Day R.	John Day R.	Wyllie Ranch	S.F.J.D.R. # 1	
9. Basin 6	S.F. John Day R.	John Day R.	Schrier	S.F.J.D.R. # 4	
10. Basin 6	S.F. John Day R.	John Day R.	Fields	S.F.J.D.R. # 6	
11. Basin 6	S.F. John Day R.	John Day R.	Gregg	S.F.J.D.R. # 9	
12. Basin 6	Laycock Cr.	John Day R.	Johnson	Lay.C. # 1	
13. Basin 6	Rock Cr.	John Day R.	Park Service	Rock.C. # 8	Complete
14. Basin 6	Long Cr.	N.F. John Day R.	Livingston	Long.C. # 1	
15. Basin 6	Long Cr.	N.F. John Day R.	Livingston	Long.C. # 2	
16. Basin 6	Little Indian Cr.	Indian Cr.	Blagden	L.I.C. # 1	
17. Basin 6	Riley Cr.	John Day R.	Marciel	Ril.C. # 1 (115)	Complete
18. Basin 6	Riley Cr.	John Day R.	Marciel	Ril.C. # 2 (114)	Cancelled
19. Basin 6	Riley Cr.	John Day R.	Marciel	Ril.C. # 3 (113)	Surveyed
20. Basin 6	Riley Cr.	John Day R.	Marciel	Ril.C. # 4 (112)	Surveyed
21. Basin 6	Riley Cr.	John Day R.	Porfily	Ril.C. # 5 (111)	Surveyed
22. Basin 6	Riley Cr.	John Day R.	Porfily	Ril.C. # 6 (110)	Surveyed
23. Basin 6	Vance Cr.	Canyon Cr.	J-L Ranch	Van.C. # 1	
24. Basin 6	John Day R.	Columbia R.	Panama Ditch	J.D.R. # 46	Surveyed
25. Basin 6	John Day R.	Columbia R.	Bowers	J.D.R. # 49	
26. Basin 6	John Day R.	Columbia R.	Gable/Holthouse	J.D.R. # 56 (104)	Complete
27. Basin 6	John Day R.	Columbia R.	Ray Ranch	J.D.R. # 34	
28. Basin 6	John Day R.	Columbia R.	Oliver/Mullins	J.D.R. # 41 (106)	Complete
29. Basin 6	Murderer's Cr.	S.F. John Day R.	ODFW P.S. WA	M.C. #1	Complete
30. Basin 6	Murderer's Cr.	S.F. John Day R.	ODFW P.S. WA	M.C. #3 (96)	Complete
31. Basin 6	John Day R.	Columbia R.	Carter	J.D.R. #37 (99)	Complete
32. Basin 6	John Day R.	Columbia R.	Carter	J.D.R. #38 (100)	Complete
33. Basin 6	John Day R.	Columbia R.	Carter	J.D.R. #39 (101)	Surveyed
34. Basin 6	John Day R.	Columbia R.	Enright	J.D.R. #48 (103)	Complete
35. Basin 7	Walla Walla R.	Columbia R.	WW Irr. Dist.	W.W.R. # 203 (26)	Complete
36. Basin 6	Cottonwood	N.F. John Day R.	Davidson	N.F.J.D.R #2 (68)	Complete
37. Basin 6	Cottonwood	N.F. John Day R.	Davidson	N.F.J.D.R #3 (70)	Complete
38. Basin 6	Bear Cr.	Bridge Creek	Long	B.C. #1 (107)	Complete
39. Basin 6	Bear Cr.	Bridge Creek	Long	B.C. #2 (102)	Complete
40. Basin 6	Bear Cr.	Bridge Creek	Long	B.C. #3 (108)	Complete
41. Basin 6	John Day R.	Columbia R.	Clausen	J.D.R. #63 (116)	Surveyed
42. Basin 6	John Day R.	Columbia R.	Clausen	J.D.R. #64 (120)	Complete

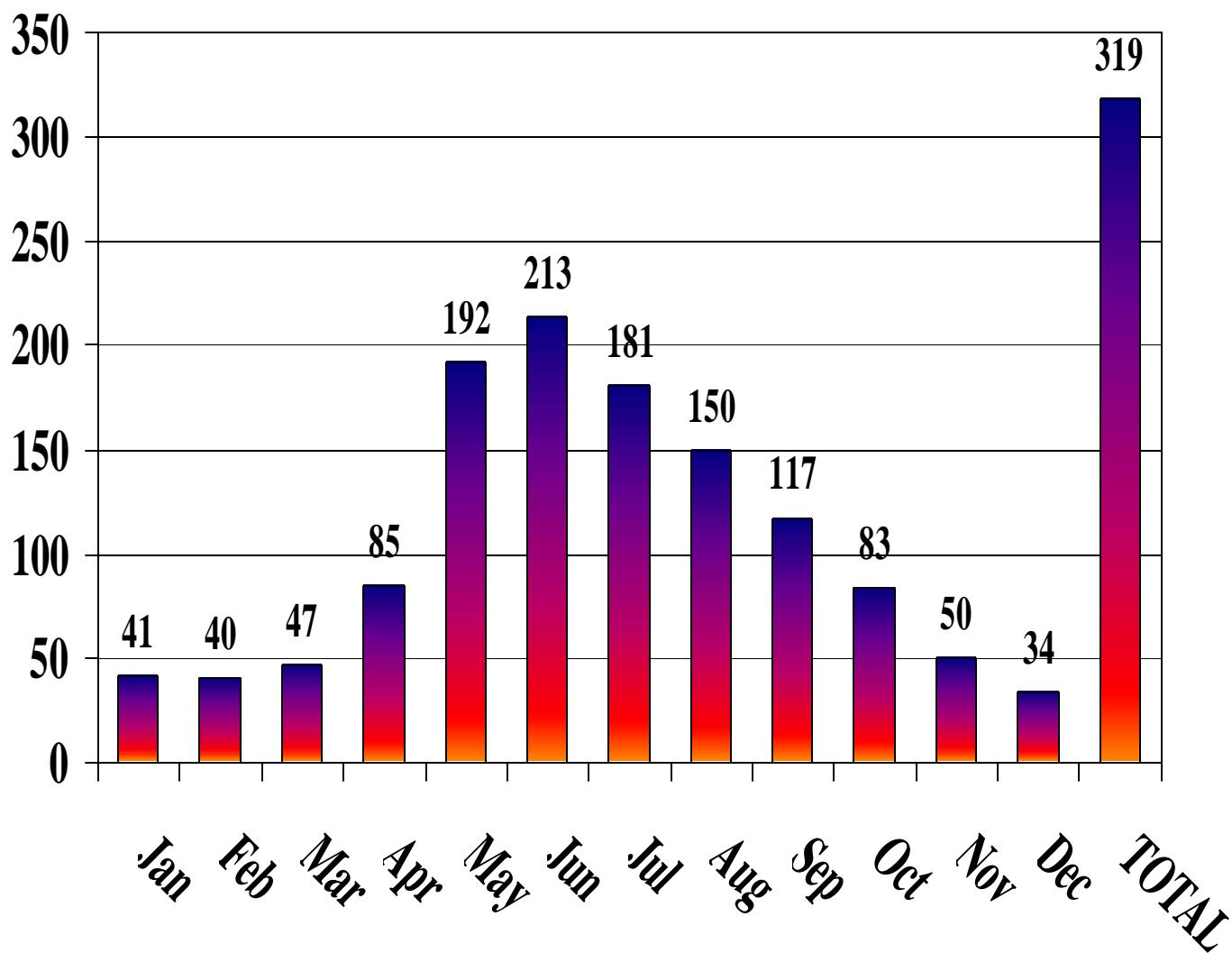
43. Basin 6	Rudio Cr.	N.F. John Day R.	Campbell	R.C. #2 (63)	Surveyed
44. Basin 6	Rudio Cr.	N.F. John Day R.	Campbell	R.C. #3 (117)	Surveyed
45. Basin 7	Umatilla R.	Columbia	Forth	U.R.	Surveyed
46. Basin 6	Passage	*If site is identified.			

Completed Fish Screen Projects

Table 2

	<u>Screen Size</u>				<u>Concrete</u>	<u>Bypass</u>	<u>Head</u>	<u>Measure</u>
<u>Site #</u>	<u>Degree/Bays</u>	<u>Drive</u>	<u>CFS</u>	<u>Structure</u>	<u>yds.</u>	<u>ft.</u>	<u>Gate</u>	<u>Device</u>
3	7'x36", 4'x36" @ 60 dual	Gravity	8.18	prefab	1.5	80		
4	4x18 @ 60 single	Gravity	0.48	reassembled	7.5	60		
6	9x30 @ 60 single	Solar	5.80	reassembled	10.5	220		
13	3x24 @ 60 single	Gravity	1.39	new forms	9.0	40		
29	4x18 @ 60 single	Gravity	1.49	prefab	4.0	100		prefab
30	6x24 @ 60 single	Gravity	2.75	reassembled	11.0	60		prefab
34	4x24 @ 60 dual	Gravity	4.2	reassembled	14.0	160		
35	10x24 @ 60 single	Gravity	5.0	prefab	7.0	40		
36	8x24 @ 60 single	Solar	4.21	new forms	9.5	40		
37	4x18 @ 60 single	Gravity	1.46	reassembled	8.5	120		
	SUBTOTAL 1ST QUARTER		34.96		82.5	920		
5	2x18 @ 90 single	Gravity	.68	prefab	.75	80		
26	6x24 @ 60 single	Gravity	2.74	new forms	9.5	80		
31	8x24 @ 60 single	Gravity	2.93	new forms	10	160		
32	5x24 @ 60 single	Gravity	.12	reassembled	10	160		
	SUBTOTAL 2ND QUARTER		6.47		30.25	480		
28	6x24 @ 60 single	Gravity	1.4	reassembled	12	100	Concrete	
38	5x18 @ 60 single	Gravity	1.3	reassembled	8.5	100		
40	5x18 @ 60 single	Gravity	1.3	reassembled	8	100		
	SUBTOTAL 3rd QUARTER		4.0		28.5	300		
1	6x30 60 dual	Gravity	7.9	reassembled	21	520		
17	5x18 60 single	Gravity	2.03	reassembled	8	100		
39	5x18 60 single	Gravity	1.3	reassembled	8	20		
42	5x30 60 single	Gravity	2.37	new forms	18	360	Concrete	
	SUBTOTAL 4th QUARTER		13.6		56	1000		
Totals	21		59.03	Total	197.25	2700		

Table 3
SCREENS IN OPERATION FY 2003



* 319 Screens operated and maintained. The most screens in operation at any one time were 213. This was due to weather conditions, water quantity, water leases and agricultural crop harvesting.

**Table 4. Forty-five year steelhead spawning ground summary
John Day Fish District.**

Year	Number of Streams Surveyed	Miles Surveyed	Live Steelhead	Redds	Redds Per Mile
1959	6	14.5	30	108	7.4
1960	10	22.0	60	194	8.8
1961	8	24.5	56	166	6.8
1962	10	26.5	56	184	6.9
1963	11	30.5	47	216	7.1
1964	13	43.5	51	266	6.1
1965	19	45.0	88	344	7.6
1966	23	69.0	141	1103	16.0
1967	25	78.0	61	905	11.6
1968	23	74.5	19	358	4.8
1969	27	91.5	76	806	8.8
1970	21	65.0	58	530	8.2
1971	8	22.5	18	181	8.0
1972	16	53.5	41	409	7.6
1973	25	76.4	22	402	5.3
1974	14	38.0	4	167	4.4
1975	14	34.0	21	302	8.9
1976	21	59.8	8	308	5.2
1977	30	75.5	69	535	7.1
1978	35	102.7	21	438	4.3
1979	29	78.7	4	81	1.0
1980	34	90.1	11	305	3.4
1981	33	86.1	12	319	3.7
1982	32	71.8	34	301	4.2
1983	31	89.3	39	438	4.9
1984	29	76.7	33	299	3.9
1985	39	120.3	88	1016	8.4
1986	43	120.6	129	1323	11.0
1987	61	154.3	82	1757	11.4
1988	46	128.0	111	1551	12.1
1989	35	106.5	42	340	3.2
1990	39	114.3	37	451	3.9
1991	29	91.9	8	225	2.4
1992	35	107.3	70	608	5.7
1993	24	68.0	14	166	2.4
1994	38	114.6	6	352	3.1
1995	34	104.1	8	135	1.3
1996	35	100.8	9	225	2.2
1997	33	96.5	15	165	1.7
1998	27	70.6	4	134	1.9
1999	28	79.6	20	169	2.1
2000	30	89.7	8	366	4.1
2001	29	85.7	75	433	5.1
2002	35	105.2	189	876	8.3
2003	33	100.1	28	467	4.7
10-YR AVG	32	94	37	332	3.5

Table 5. Summary of Spring Chinook salmon spawning density, John Day District, 1959-2003.

Redds/mile								
Year	Bull Run	Clear Cr.	Granite Cr.	Granite System	Upper JDR	MF John Day	NF John Day	Total
1959	*	4.3	6.0	5.3	0.3	0.0	*	2.6
1960	*	16.3	10.0	12.5	0.7	3.2	*	7.5
1961	*	3.3	5.3	4.5	3.0	1.1	*	3.2
1962	2.0	49.7	44.2	44.3	12.2	2.8	*	22.2
1963	7.0	29.2	26.4	28.4	0.8	0.4	*	12.7
1964	10	49.7	34.8	38.3	1.3	3.6	7.8	17.8
1965	7.5	16.7	24.4	18.5	5.8	3.7	8.1	11
1966	0.3	43.5	31.0	28.4	9.3	6.5	10.3	16.8
1967	6.0	38.5	19.4	23.1	7.4	1.7	5.5	13
1968	6.4	60.5	50.2	44.3	0.7	0.4	8.8	14.4
1969	15.6	13.7	16.8	15.9	9.3	4.8	20.5	13.3
1970	26.4	18.7	33.6	26.9	8.3	7.6	16.8	14.1
1971	11.6	18.8	31.2	22.6	7.0	4.1	11.8	11.5
1972	24.4	39.5	43.5	38.2	3.9**	5.1	10.5	14.2
1973	7.2	27	36	27	8.9	4.3	19.4	15.7
1974	7.6	8.0	25.5	15.9	2.5	8.1	7.2	8.2
1975	18.8	11.5	24.7	19.1	7.1	8.9	11.7	11.7
1976	9.2	7	20.2	13.5	4.6	6.6	6.2	7.5
1977	11.6	12.8	23.1	17.3	4.9	5.8	16.4	11.1
1978	12.4	6.3	19.8	13.8	4.5	10.7	5.9	8.3
1979	6.4	7.0	15.6	10.8	5.2	11.8	11.1	9.7
1980	1.2	7.0	8.5	6.5	1.2	5.8	4.3	4.3
1981	2.8	11.3	10.6	9.2	3.9	2.6	7.7	6.1
1982	5.2	10.8	12.0	10.2	3.8	6.2	5.5	6.4
1983	0.8	1.0	7.3	3.8	10.2	5.1	4.2	5.8
1984	3.2	2.0	5.8	4	5.6	6.7	3.5	4.4
1985	6.4	8.2	15.1	11	8.9	4.0	6.1	7.5
1986	2.4	11.5	20.2	13.6	12.2	6.3	14.3	11.9
1987	5.6	14	12.9	11.8	19	28.3	20.8	20.2
1988	1.2	11.0	12.5	9.7	6.3	20.1	13.6	12.4
1989	6.0	16.7	12.2	12.4	12.7	9.4	10.9	11.3
1990	2.4	2.7	11.1	6.5	9.5	3.9	14.3	9.2
1991	1.6	5.2	5.5	4.6	4.7	2.9	6.4	4.8
1992	0.0	11.7	16.5	11.5	10.9	9.0	18.8	13.2
1993	17.6	25.6	19.8	21.3	10.4	12.9	21.1	16.9
1994	0.0	4.0	14.5	8	13.0	7.8	11.2	10.2
1995	0.0	2.8	2.2	1.9	2.2	1.3	1.5	1.7
1996	3.6	9.5	14.7	10.7	17.5	11.3	16.2	14.2
1997	7.2	7.2	10	8.5	9.6	13.6	10.9	10.7
1998	0.4	2.8	8.4	4.8	8.3	6.6	5.6	6.4
1999	3.2	3.8	11.6	7.3	4.5	8.8	6.7	6.7
2000	4.8	20.0	28.0	20.5	28.1	30.6	26.9	25.7
2001	12.3	26.7	17.6	18.5	28.2	14.2	34.3	24.6
2002	9.7	18	19.3	16.5	37.2	21	29	26.5
2003	0.4	7.3	9.3	6.8	20.1	15.3	26.8	18.4

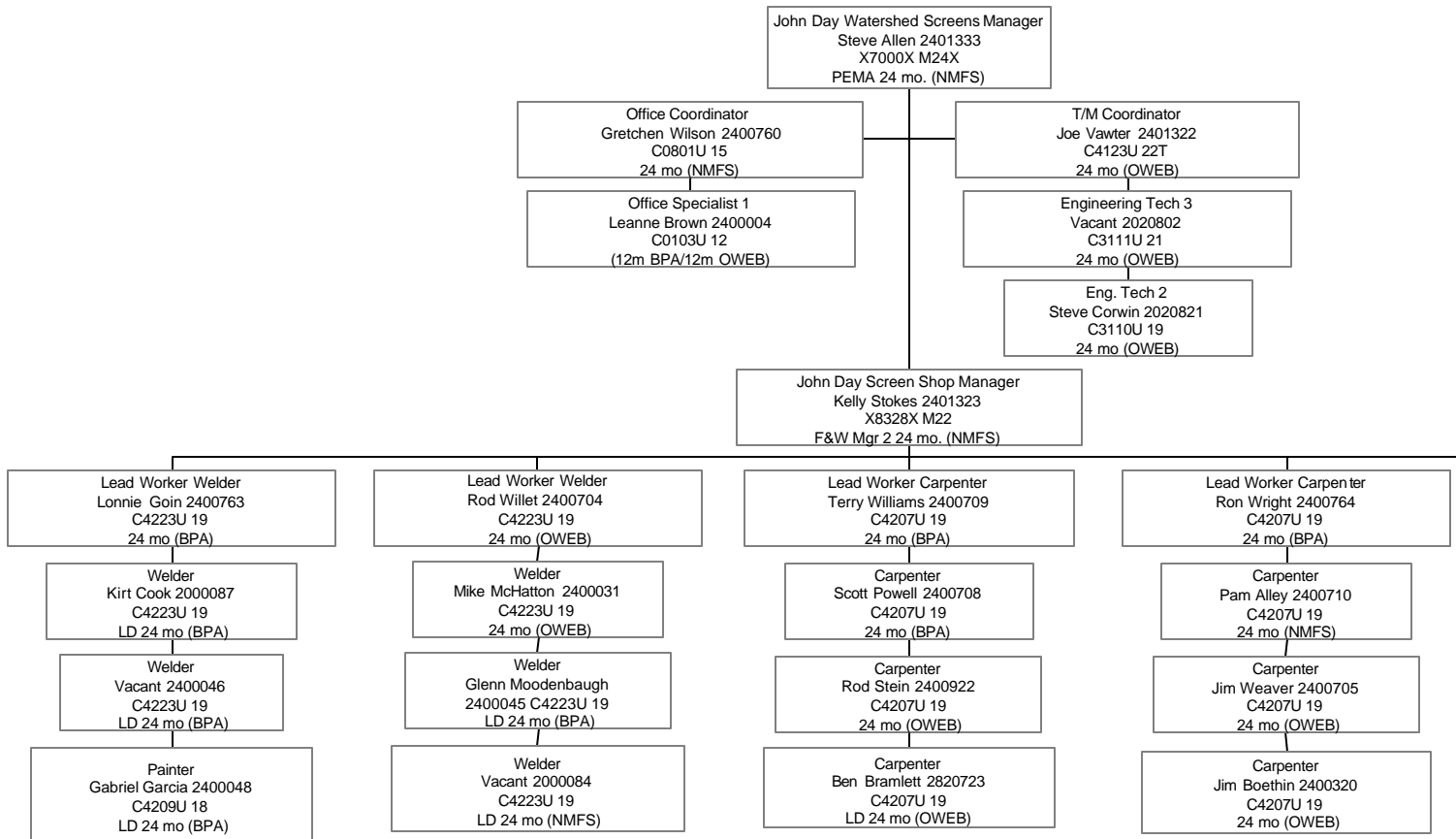
*No survey; **Count low due to poor counting conditions

Table 6

John Day Watershed District

Fish Screen and Passage Program

December 2003



Project Picture Information				
Site#	Location	Screen type	Screen size	CFS
36	Cottonwood Cr. No. 02	Rotary Drum	8'x24"	4.21
37	Cottonwood Cr. No. 03	Rotary Drum	4'x18"	1.46
3	S.F. John Day River No. 05	Rotary Drum	4'x7'x36" Dual	8.18
5	Canyon Cr. No. 10	Rotary Drum	2'x18"	0.68
4	Canyon Cr. No. 02	Rotary Drum	4'x18"	0.48
1	M.F. John Day River No. 08	Rotary Drum	6'x30" Dual	8.16
6	John Day River No. 60	Rotary Drum	9'x30"	5.8
30	Murderers Cr. No. 03	Rotary Drum	6'x24"	2.6
31	John Day River No. 39	Rotary Drum	8'x24"	2.93
32	John Day River No. 37	Rotary Drum	5'x24"	0.12
39	Bear Cr. No. 02	Rotary Drum	5'x18"	1.3
34	John Day River No. 48	Rotary Drum	4'x24" Dual	4.2
26	John Day River No. 56	Rotary Drum	6'x24"	2.75
28	John Day River No. 41	Rotary Drum	6'x24"	1.4
38	Bear Cr. No. 01	Rotary Drum	5'x18"	1.3
40	Bear Cr. No. 03	Rotary Drum	5'x18"	1.3
17	Riley Cr. No. 01	Rotary Drum	5'x18"	2.03
42	John Day River No. 64	Rotary Drum	5'x30"	2.37
45	Walla Walla River No. 203	Rotary Drum	10'x24"	5
29	Murderers Cr. No. 01	Rotary Drum	4'x18"	1.49
13	Rock Cr. No. 08	Rotary Drum	3'x24"	1.39
DU/OWEB	Cooperative effort providing passage at Ladd Marsh Wildlife Area			
Paddlewheel	New more efficient paddlewheel style adopted from Idaho Fish and Wildlife			
Head Gate	Concrete head gate implemented for screen protection during flood events			
Prefab h.g.	Prefab head gate providing protection for screening facility			



Site 36_ Before - Cottonwood Cr.



Site 36_ After



Site 37_ Before - Cottonwood Cr.



Site 37_ After



Site 3_ Before - SFJDR



Site 3_ After



Site 5_ Before - Canyon Cr



Site 5_ After



Site 4_ Construction - Canyon Cr



Site 4_ After



Site 1_ Before - MFJDR



Site 1_ Pre-installation



Site 6_ Before - JDR



Site 6_ After



Site 30_ Before - Murderers Cr



Site 30_ After



Site 31_ Before - JDR



Site 31_ After



Site 32_ Before - JDR



Site 32_ After



Site 39_ Before - Bear Cr



Site 39_ Pre-installation



Site 34_ Before - JDR



Site 34_ After



Site 26_ Before - JDR



Site 26_ After



Site 28_ Construction - JDR



Site 28_ After



Site 38_ Before - Bear Cr



Site 38_ Under Construction



Site 40_ Before - Bear Cr



Site 40_ After



Site 17_ Before - Riley Cr



Site 17_ Under Construction



Site 42_ Before - JDR



Site 42_ After



Site 45_ Before - Walla Walla R



Site 45_ After



Site 29_ Before - Murderers Cr



Site 29_ After



Site 13_ Rock Cr - Before



Site 13_ After



DU/OWEB Ladder - Ladd Cr



New Style Paddlewheel



Concrete Headgate



Prefab Headgate